REMARKS

Claims 1-16 are pending in the application. Claims 2-16 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claims 1 and 2 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hill (U.S. Patent No. 5,713,016) ("Hill"). Applicants submit the following arguments to traverse the prior art rejections.

Rejection of Claims 2-16 under § 112, first paragraph

Applicants submit that the explanation provided in the Amendment of November 7, 2003, is an explanation which is commonly known to one skilled in the art. The explanation relates to an intermediate value theorem. The intermediate value theorem is well known in the art. Let G(x) be a function which is continuous on the closed interval [0, A], and suppose that C is a real number between G(0) and G(A), then there exists a value a in [0, A] such that f(a) = C by the intermediate value theorem.

In the present invention, let us G(x) = $\int^{x} f(x)$, then the intermediate value theorem can be applied to G(x) because G(x) is continuous function. So, the value of G(A)/N lies between G(0) and G(A), and there exists unique value x_1 such that $G(x_1) = G(A)/N$ by intermediate value theorem. In the same way, there exists unique value x_2 such that $G(x_2) = 2G(A)/N$ and it can be found x_i such that $G(x_i) = i * G(A)/N$. Then,

$G(x_{i+1}) - G(x_i) = \int_0^{x_{i+1}} f(x) - \int_0^{x_i} f(x) = \int_{x_i}^{x_{i+1}} f(x)$ and, $G(x_{i+1}) - G(x_i) = (i+1)*G(A)/N - i*G(A)/N$.

Therefore, we can find x_i, such as $0=x_0<x_1< \ldots <x_N$ with the property such that

$$\int_{x_i}^{x_{i+1}} f(x) = G(x_{i+1}) - G(x_i) = G(A)/N = \int_0^A f(x)/N .$$

Rejection of Claims 1 and 2 under § 102(b) over Hill

The Examiner maintains his rejection of claim 1 and states that "Hill creates a feature vector in the feature vector space by identifying a property of a document to which the feature vector is fit," that "[s]uch properties have statistical representation (Hill, col. 3, lines 29-59)." To expedite the prosecution of this case, Applicants have rewritten claim 2 in independent form by adding the subject matter of claim 1 and canceling claim 1.

Applicants submit that claim 2 is patentable because Hill fails to teach or suggest steps (a-1) through (a-4), in combination with other elements of the claim. In the rejection of claim 1, the Examiner points to col. 3, lines 29-59 of Hill as teaching the step of adaptively approximating feature vectors:

> In step 10, a feature vector representing a first document is identified and created. Similarly, in step 12, a feature vector for a second document is identified and created. The first and second document comprise data representing text, image, audio or video information or a combination of such information. Each feature vector comprises a property of the document chosen to represent the content of the document.

(Emphasis added). No additional description is disclosed in Hill regarding exactly how the first and second feature vectors are identified and created. The Examiner states that "Hill creates a feature vector in the feature vector space by identifying a property of the document to which the

feature vector is fit." Thus, the Examiner appears to argue that some property in the first document teaches the claimed "statistical distribution of feature vector data in the feature vector data space."

In the rejection of claim 2, however, the Examiner states that the marginal distribution of z_j taught by Hill teaches the claimed step of estimating the marginal distribution. The marginal distribution of z_j taught by Hill is based on z^i_j which is the number of times word j occurs in the Z^i unfiltered words of training document i. Col. 7, lines 55-56. In other words, the marginal distribution taught by Hill is based on the training document i. This is inconsistent with the Examiner's argument for claim 1 because the claimed relationship between the marginal distribution and the feature vector data space as claimed in steps (a-1) and (a-2) establishes a relationship between the marginal distribution and the feature vector data space. Thus, according to the Examiner's arguments for claim 1, the marginal distribution would be derived from the first document, but the marginal distribution of z_j is derived from the training document i, in Hill. Thus, Applicants submit that claim 2 is patentable.

Also, the Examiner states that the "uniform tables" in FIGS. 5A and 5B teach the claimed plurality of grids. Applicants submit that these tables have absolutely no relation to the estimated marginal distribution as recited in the claims.

Claims 3-15, which depend from claim 2, are patentable for at least the reasons submitted for claim 2.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

Seok-Won Stuart Lee*
*Granted limited recognition under 37 C.F.R. § 10.9(b), as shown in a copy of the same filed on April 16, 2004, at the U.S.P.T.O.

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: April 16, 2004